

**TRANSLATION**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. <b>PCT/RU2004/000239</b>	International filing date ( <i>day/month/year</i> ) <b>22.06.2004</b>	Priority date ( <i>day/month/year</i> ) <b>20.11.2003</b>	
International Patent Classification (IPC) or national classification and IPC <b>F04F5/54</b>			
Applicant <b>KHOMYNETS, Zinoviy Dmitrievich</b>			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of _____ sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/RU	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/RU2004/000239

## Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 

This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
 
  - international search (Rule 12.3 and 23.1(b))
  - publication of the international application (Rule 12.4)
  - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
 

the international application as originally filed/furnished

the description:  
 pages \_\_\_\_\_ as originally filed/furnished  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the claims:  
 nos. \_\_\_\_\_ as originally filed/furnished  
 nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19  
 nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the drawings:  
 sheets \_\_\_\_\_ as originally filed/furnished  
 sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3.  The amendments have resulted in the cancellation of:
 

the description, pages \_\_\_\_\_  
 the claims, nos. \_\_\_\_\_  
 the drawings, sheets/figs \_\_\_\_\_  
 the sequence listing (*specify*): \_\_\_\_\_  
 any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 

the description, pages \_\_\_\_\_  
 the claims, nos. \_\_\_\_\_  
 the drawings, sheets/figs \_\_\_\_\_  
 the sequence listing (*specify*): \_\_\_\_\_  
 any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/RU2004/000239

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

## 1. Statement

Novelty (N)	Claims	1–6	YES
	Claims		NO
Inventive step (IS)	Claims	1–6	YES
	Claims		NO
Industrial applicability (IA)	Claims	1–6	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

Reference is made to the following documents cited in the search report:

- D1: RU 2121610 C1
- D2: SU 1146416 A
- D3: RU 2059891 C1
- D4: US 4744730 A
- D5: US 4293283 A

D1, which is the closest prior art (prototype) for the invention according to claim 1, discloses a well jet device, which comprises, mounted on a casing string: a packer, a jet pump in whose housing are situated a nozzle and a mixing chamber with diffuser, a stepped through channel also being embodied, and, mounted therein, a sealing unit with an axial channel. Moreover, a flexible pipe axially displaceable relative to the sealing unit is passed through the axial channel thereof, and a logging device for measuring physical quantities is mounted on the lower end of said pipe.

D1, which is the closest prior art (prototype) for the invention according to claim 4, discloses

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/RU2004/000239

**Box No. V** **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

a method of operation of a well jet device, whereby a jet pump with a stepped through channel in its housing and a packer with a through channel, situated below the jet pump, are lowered into the well on the casing pipe; when the required depth is reached the packer is released, and a liquid working medium is then fed to the jet pump nozzle, creating a number of depressions of different size in the under-packer space.

The claimed device, characterised in claim 1, differs from D1 in that the jet pump is mounted above the productive strata of the well at a distance determined by a mathematical expression, and the jet pump is embodied with corresponding size ratios.

The claimed invention characterised in claim 4 differs from D1 in that the jet pump embodied according to claim 1 is mounted above the productive strata to be surveyed; the logging device is then lowered along the pipe string on the flexible pipe with a perforated lower section passed through the sealing unit, and is installed in the productive strata area at the lower end of the flexible pipe; furthermore, the sealing unit is installed in the through channel of the jet pump during the lowering process, and background values of physical parameters of the productive strata are recorded in the well shaft using the logging device; moreover, the well flow is measured after creation of a number of depressions; measures are then performed of the physical parameters of the productive strata,

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/RU2004/000239

Box No. V      **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

displacing the logging device on the flexible pipe along the latter, and of the stratum fluid entering the well. After the measures have been completed the logging device is raised to the surface, the packer is released, and the pipe string with jet pump and packer is raised.

Therefore, claim 1 and claim 4 meet the requirement of novelty.

The distinguishing features cited make it possible to intensify work to survey, test and prepare wells, primarily wells that are horizontal and of great curvature. The location and dimensions of the jet pump are optimised for operation thereof in combination with the logging device, thereby increasing the operational reliability of the well jet device.

Documents D2-D5 characterise the background art for the given problem, and do not contain the cited distinctive features, characterising the claimed method for operating a well jet device during ultrasound cleaning of the wellbore area of the stratum, and a well jet device. Therefore, the set of claims meets the requirement of inventive step.

The claimed device and method for operation thereof are industrially applicable.